

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A rubber composition for a tire tread comprising 10-250 parts by weight of a carbon black per 100 parts by weight of a rubber component, in which the said carbon black is produced in a carbon black production step using a production furnace wherein a combustion zone, a reaction zone and a reaction stop zone are coaxially connected to each other and including a step of producing a high-temperature combustion gas through the combustion of hydrocarbon fuel in the combustion zone, a step of spraying a starting hydrocarbon into the high-temperature combustion gas flow in the reaction zone to convert the starting hydrocarbon into carbon black through partial combustion or thermal decomposition reaction and a step of quenching the high-temperature combustion gas flow with a quenching medium in the reaction stop zone to complete the reaction, under conditions satisfying the following relational equations (1) and (2):

$$2.00 \leq \alpha \leq 9.00 \dots (1)$$

$$-2.5 \times \alpha + 85.0 \leq \beta \leq 90.0 \dots (2)$$

when a residence time from the introduction of the starting hydrocarbon into the high-temperature combustion gas flow to the introduction of the quenching medium is  $t_1$  (sec), an average reaction temperature for such a time is  $T_1$  (°C), a residence time from the introduction of the quenching medium to the enter of a reaction gas flow into the reaction stop zone is  $t_2$  (sec), an average reaction temperature for such a time is  $T_2$  (°C),  $\alpha = t_1 \times T_1$  and  $\beta = t_2 \times T_2$ ,

wherein the carbon black has a hydrogen desorption ratio  $> 0.260 - 6.25 \times 10^{-4} \times \text{CTAB}$  (wt%), a toluene tinting permeability of not less than 90% and a cetyltrimethylammonium bromide adsorption specific surface area (CTAB) of 111-200  $\text{m}^2/\text{g}$ , ~~and the hydrogen desorption ratio of the carbon black is not less than 0.20%.~~

2. (original): A rubber composition for a tire tread according to claim 1, which is compounded with the carbon black produced in the carbon black production step that the  $\alpha$  value and the  $\beta$  value satisfy the following relational equations (3) and (4):

$$3.00 \leq \alpha \leq 8.00 \dots (3)$$

$$-2.5\alpha + 85.0 \leq \beta \leq 86.0 \dots (4)$$

3. (previously presented): A rubber composition for a tire tread according to claim 1, which is compounded with the carbon black produced in the carbon black production step further comprising a step of introducing a gaseous body in the reaction zone or the reaction stop zone.

4. (previously presented): A rubber composition for a tire tread according to claim 1, which is compounded with the carbon black having a dibutyl phthalate absorption (DBP) of 40-250 ml/100 g, a compressed DBP absorption (24M4DBP) of 35-220 ml/100 g and a cetyltrimethylammonium bromide adsorption specific surface area (CTAB) of 111-200  $\text{m}^2/\text{g}$ .

5. (previously presented): A rubber composition for a tire tread according to claim 4, which is compounded with the carbon black having a dibutyl phthalate absorption (DBP) of 95-220 ml/100 g and a compressed DBP absorption (24M4DBP) of 90-200 ml/100 g.

6. (previously presented): A rubber composition for a tire tread according to claim 4, which is compounded with the carbon black having a tinting strength (TINT) >  $0.363 \times \text{CTAB} + 71.792$ .

7. (previously presented): A rubber composition for a tire tread according to claim 4, which is compounded with the carbon black having a tinting strength (TINT) <  $0.363 \times \text{CTAB} + 71.792$  and (TINT) > 50.

8.-9 (canceled).

10. (previously presented): A rubber composition for a tire tread according to claim 1, which is compounded with the carbon black having an extraction amount with monochlorobenzene of not more than 0.15%.

11. (previously presented): A pneumatic tire comprising a rubber composition for a tire tread as claimed in claim 1 in a tread portion.